

## CLAIMS

What is being claimed is:

1. A lighting arrangement comprising a LED array and a circuit arrangement for supplying the LED array, the circuit arrangement comprising a DC-DC-converter for generating a DC output voltage  $V_{out}$  out of a DC input voltage  $V_{in}$  and equipped with  
input terminals for connection to a supply voltage source supplying the DC input voltage  $V_{in}$ ;  
an inductive element;  
a diode;  
a switching element for controlling the current through the inductive element;  
a control circuit coupled to a control electrode of the switching element for generating a control signal for rendering the switching element periodically alternately conductive and non-conductive; and  
output terminals between which the DC output voltage  $V_{out}$  is present during operation;  
wherein the LED array is coupled between an input terminal and an output terminal.
2. A lighting arrangement as claimed in claim 1, wherein the DC-DC-converter is an up-converter.
3. A lighting arrangement as claimed in claim 1, wherein a capacitor is coupled between the output terminals.
4. A lighting arrangement as claimed in claim 1, wherein the control circuit is equipped with means for operating the DC-DC-converter in the critical discontinuous mode.
5. A lighting arrangement as claimed in claim 1, wherein the DC-DC-converter is equipped with means I for controlling the average current through the LED array at a predetermined value.
6. A lighting arrangement as claimed in claim 5, wherein the means I comprise means coupled to the input terminals and the output terminals for controlling a time lapse  $T_{on}$ , during which the switching element is maintained in a conductive state during each period of the control signal, proportional to a mathematical expression that is a function of  $V_{in}$  and  $V_{out}$ .

7. A lighting arrangement as claimed in claim 6, wherein the means I comprise means for controlling  $T_{on}$  proportional to  $V_{out}/V_{in}^2$ .

8. A circuit arrangement as claimed in claim 6, wherein the DC-DC-converter is equipped with means II for substantially square wave modulating the amplitude of the current through the LED array.